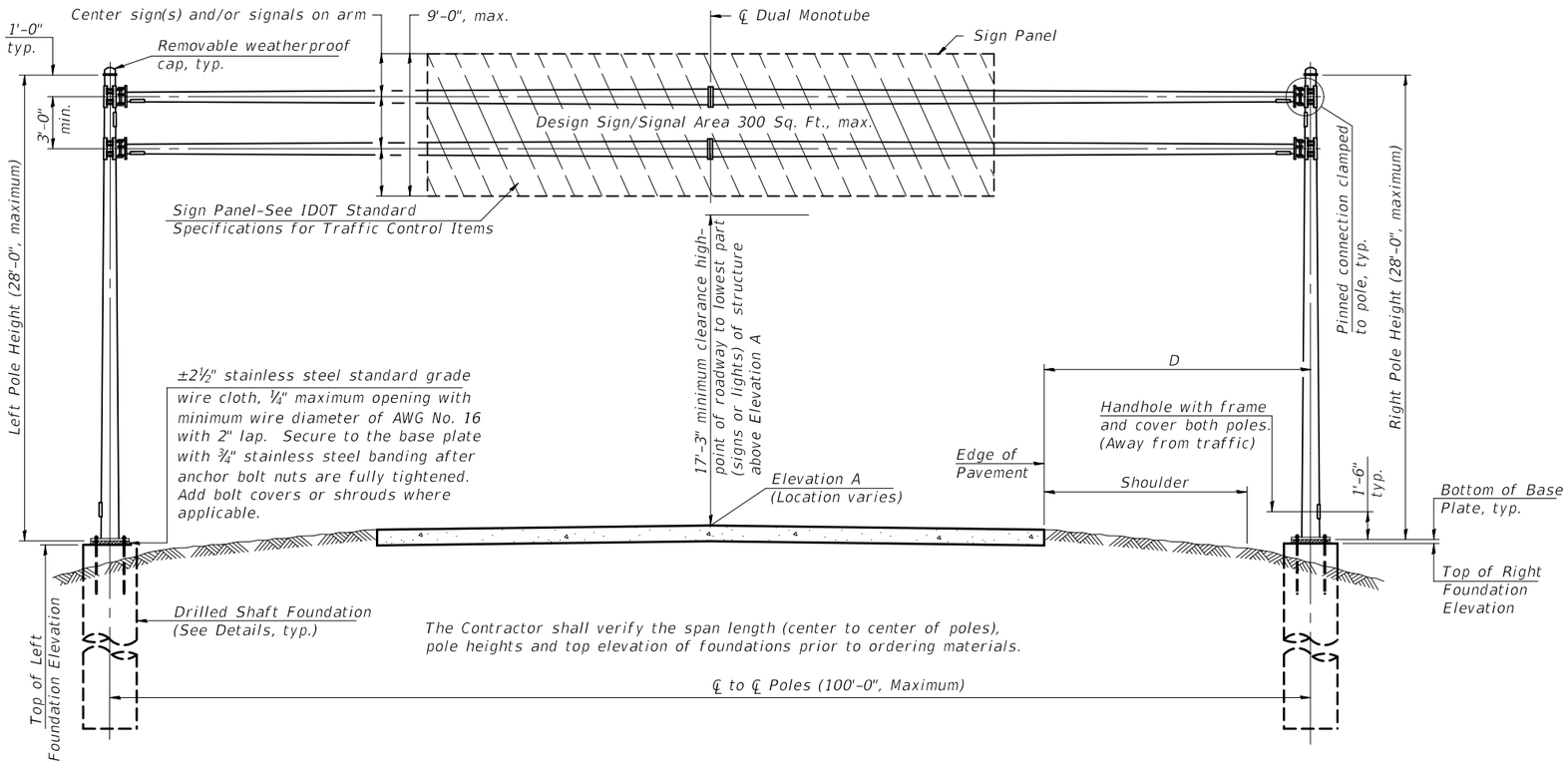
CELL / MODEL NAME	DESCRIPTION	DATE
DUALTUBE-1	Double monotube sign structure - elevation and notes	2/17/2017
DUALTUBE-2	Double monotube sign structure - details and foundation	2/17/2017
MONOTUBE-1	Single monotube sign structure - elevation and notes	2/17/2017
MONOTUBE-2	Single monotube sign structure - details and foundation	2/17/2017



ELEVATION

Looking at face of signs.
Looking upstation for structures with signs both sides.

GENERAL NOTES

DESIGN: Current (at time of letting) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (Fatigue Category II – natural wind gust only).

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions. ("Standard Specifications") All references to "Mast Arm Assembly and Pole" are applicable, unless otherwise noted.

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code and the Standard Specifications.

ANCHOR RODS: Shall conform to ASTM F1554 Grade 105. No welding shall be permitted on rods.

FASTENERS: All connection bolts shall be High Strength Bolts M164, Galvanize M232 (A153), Type 3, or stainless steel heavy hex conforming to ASTM A193, Grade B8 or B8M, Class 1. U-bolts shall be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished, or an equivalent material acceptable to the Engineer. Nuts for stainless steel bolts shall be stainless steel conforming to ASTM A194, Grade 8 (AISI Type 304) or Grade 8F (AISI Type 303). All nuts shall be "locknuts" with nylon or steel inserts and semifinished hexagonal heads equivalent to the finished heavy hex series of the American National Standard. Washers for stainless steel bolts shall be stainless steel conforming to ASTM A240, Type 302 or 304.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

CAMBER: Minimum AASHTO camber = L / 1000 + dead load camber

FOUNDATIONS: The contract unit price for Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

SIGN STRUCTURE DATA TABLE

Structure Number	Station	℄ to ℄ Poles	Elevation A	Dimension D	Actual Sign/Signal Area	Left Foundation					Right Foundation					Class SI Concrete (Cu. Yds.)
						Elevation Top	Elev. Bottom	A	B	F	Elevation Top	Elev. Bottom	A	B	F	

BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE MONOTUBE DUAL	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds	

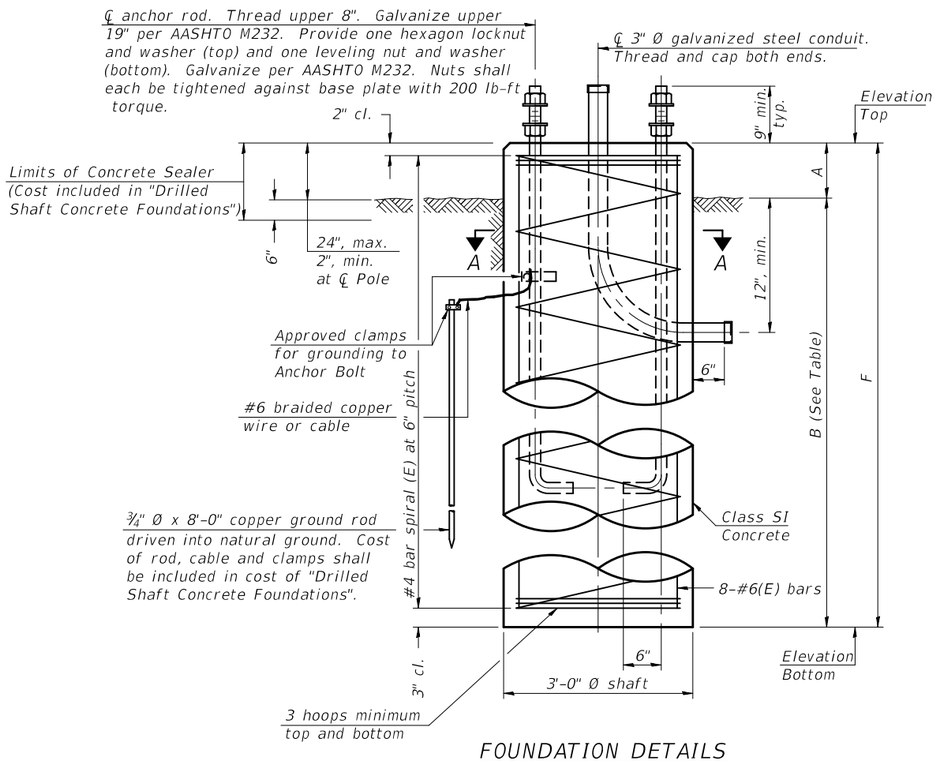
DUALTUBE - 1 2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DUAL MONOTUBE SIGN STRUCTURE

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			



FOUNDATION DETAILS

Typical, except conduit may only be required at one foundation. Provide conduit openings both poles.

Foundation Design Table	
Span (Ft.)	B (Ft.)
Span ≤ 65	12
65 < Span ≤ 85	13
85 < Span ≤ 100	14

FOUNDATIONS:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

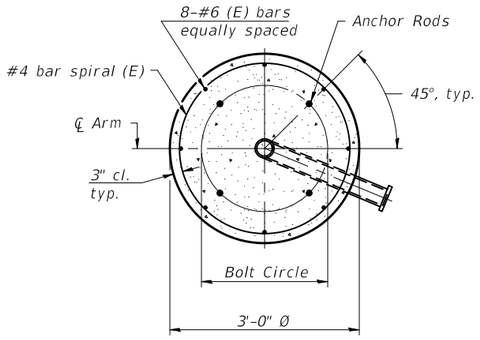
No sonotubes or decomposable forms shall be used below the lower conduit entrance.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

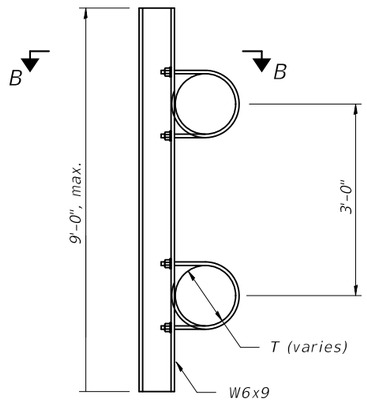
Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

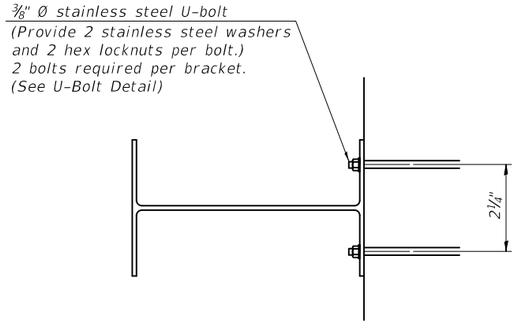
A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".



SECTION A-A

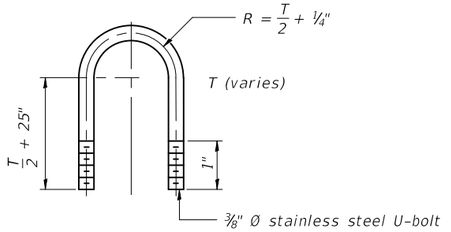


SIGN MOUNTING BRACKET



SECTION B-B

6'-0" maximum spacing.
2'-0" maximum sign overhang beyond end bracket.

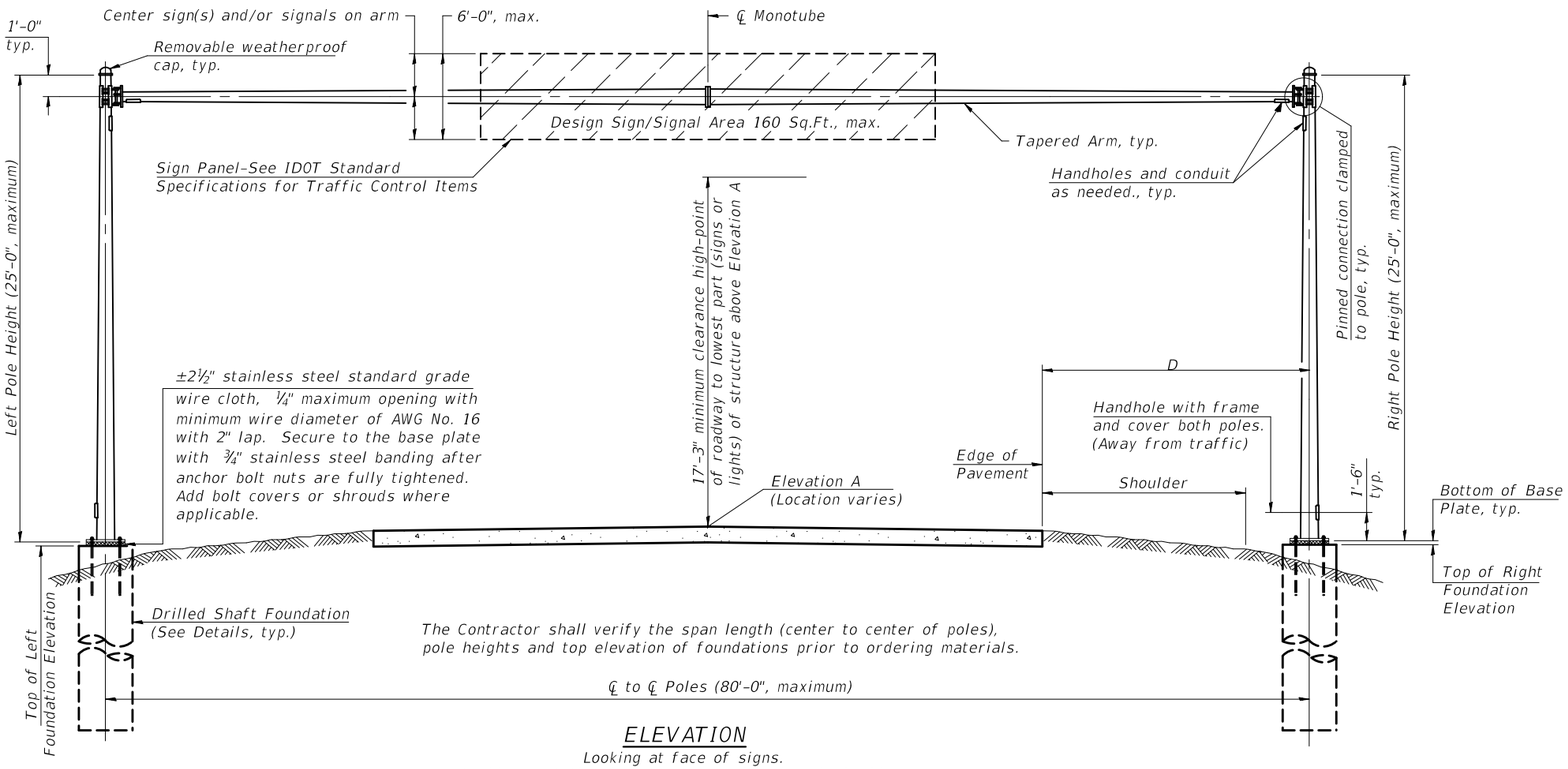


U-BOLT DETAIL

(Typical)

DUALTUBE - 2 *2-17-2017*

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DUAL MONOTUBE SIGN STRUCTURE	F.A. RTE.	SECTION / COUNTY / TOTAL SHEETS / SHEET NO.
		CHECKED -	REVISED -				
	PLOT SCALE =	DRAWN -	REVISED -				CONTRACT NO.
	PLOT DATE =	CHECKED -	REVISED -				ILLINOIS FED. AID PROJECT



ELEVATION

Looking at face of signs.
Looking upstation for structures with signs both sides.

GENERAL NOTES

DESIGN: Current (at time of letting) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (Fatigue Category II – natural wind gust only).

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REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

CAMBER: Minimum AASHTO camber = L / 1000 + dead load camber.

FOUNDATIONS: The contract unit price for Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

SIGN STRUCTURE DATA TABLE

Structure Number	Station	℄ to ℄ Poles	Elevation A	Dimension D	Actual Sign/Signal Area	Left Foundation					Right Foundation					Class SI Concrete (Cu. Yds.)
						Elevation Top	Elev. Bottom	A	B	F	Elevation Top	Elev. Bottom	A	B	F	

BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE MONOTUBE SINGLE	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	

MONOTUBE - 1 2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

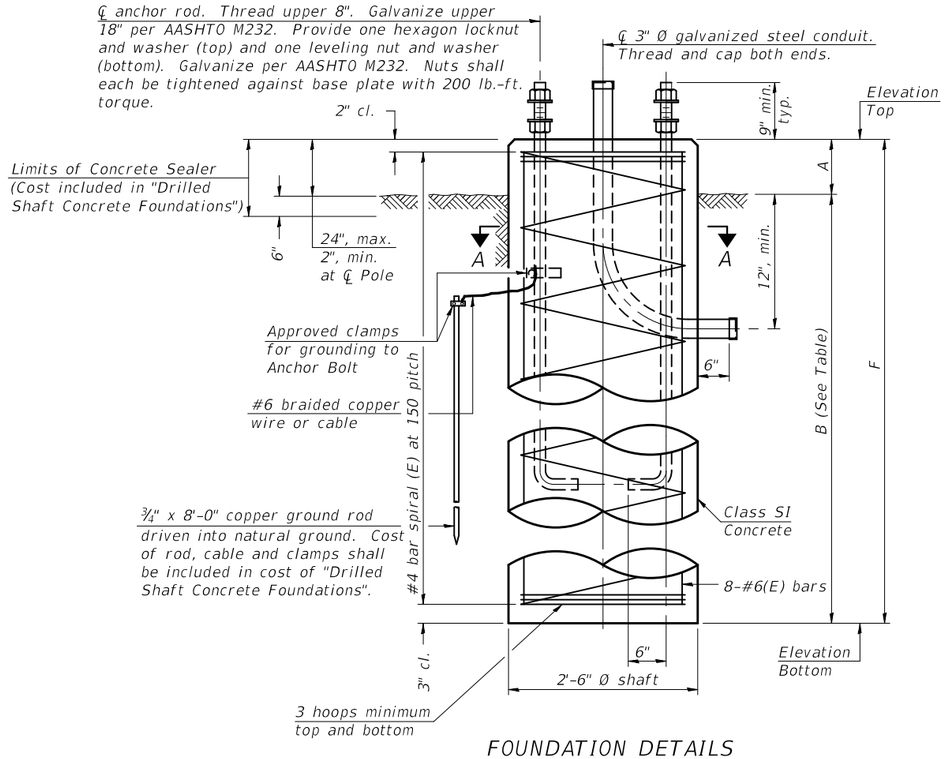
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MONOTUBE SIGN STRUCTURE

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

CONTRACT NO.

ILLINOIS FED. AID PROJECT



FOUNDATION DETAILS

Typical, except conduit may only be required at one foundation.
Provide conduit openings both poles.

Foundation Design Table	
Span (Ft.)	B (Ft.)
Span ≤ 45	9
45 < Span ≤ 65	10
65 < Span ≤ 80	11

FOUNDATIONS:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

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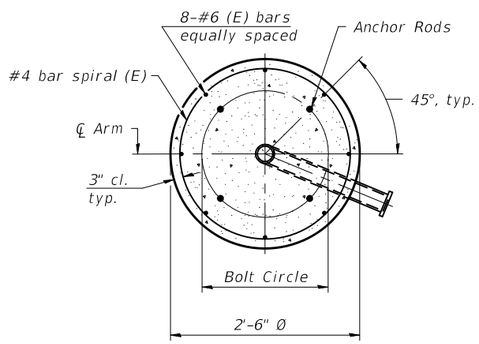
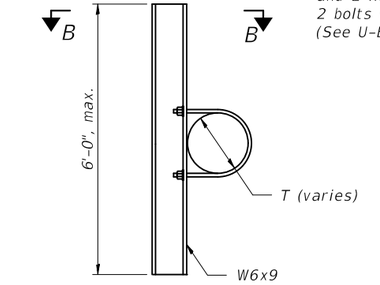
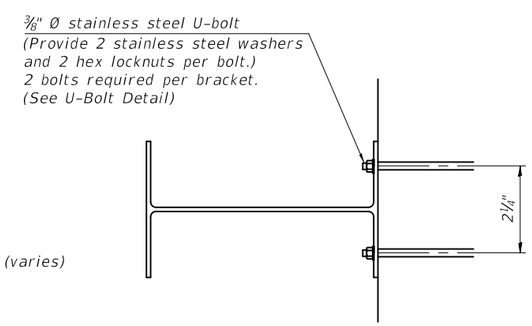


SECTION A-A



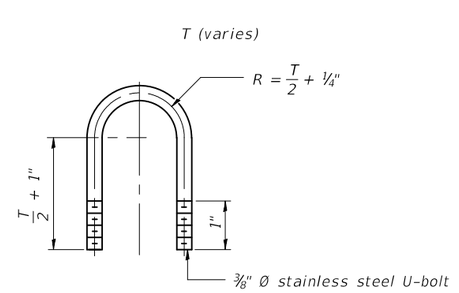
SIGN MOUNTING BRACKET

(Minimum 2 Brackets Each Sign)



SECTION B-B

6'-0" maximum spacing.
2'-0" maximum sign overhang beyond end bracket.



U-BOLT DETAIL

(Typical)

MONOTUBE - 2 2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MONOTUBE SIGN STRUCTURE
FOUNDATION AND SIGN BRACKETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			